In the Claims:

1. (Previously Presented) A system for mapping digital data into BPSK symbols comprising:

first logic for mapping successive bits of the digital data into successive BPSK symbols using one or more BPSK constellations; and

second logic for providing the one or more BPSK constellations to be applied by the first logic in mapping bits of the digital data into BPSK symbols such that orthogonal BPSK constellations are applied to successive bits of the digital data.

2. (Previously Presented) A system for mapping digital data into BPSK symbols comprising:

first logic for mapping successive bits of the digital data into successive BPSK symbols using one or more BPSK constellations;

second logic for providing the one or more BPSK constellations to be applied by the first logic in mapping bits of the digital data into BPSK symbols such that orthogonal BPSK constellations are applied to successive bits of the digital data; and

third logic for toggling a state bit between first and second states as successive bits of the digital data are encountered, wherein the second logic provides a first constellation to be applied by the first logic if the state bit is in the first state, and provides a second constellation orthogonal to the first to be applied by the first logic if the state bit is in the second state.

3. (Original) The system of claim 1 further wherein the second logic is configured to rotate the constellation to be applied by the first logic by 90° as successive bits of the digital data are encountered.

4. (Original) The system of claim 1 wherein each BPSK symbol comprises in-phase (I) and quadrature (Q) components, and the system further comprises a quadrature modulator for modulating a carrier signal with the I and Q components of the BPSK symbols and transmitting the modulated signal over a wireless interface.

5. (Previously Presented) The system of claim 1 further comprising a spreader for spreading input data with a spreading sequence to produce the digital data that are mapped by the first logic.

6. (Original) The system of claim 5 wherein the spreading sequence is a pseudo-random noise (PN) code.

7. (Previously Presented) The system of claim 1 further comprising a differential encoder for differentially encoding input data to produce the digital data which are mapped by the first logic.

8. (Original) A method of mapping digital data into BPSK symbols comprising:

mapping a bit of the digital data into a BPSK symbol using a first BPSK constellation; and

mapping a next successive bit of the digital data into a BPSK symbol using a second BPSK constellation orthogonal to the first.

9. (Original) The method of claim 8 further comprising toggling between applying the first and second constellations as successive bits of the digital data are encountered.

10. (Original) The method of claim 8 further comprising successively rotating a BPSK constellation by 90° as successive bits of the digital data are encountered, and applying the rotated BPSK constellation to successive bits of the digital data.

11. (Original) The method of claim 8 wherein each BPSK symbol comprises in-phase (I) and quadrature (Q) components, further comprising quadrature modulating a carrier signal with the I and Q components of successive BPSK symbols and transmitting the modulated signal over a wireless interface.

12. (Original) The method of claim 8 further comprising spreading input data in frequency with a spreading sequence to result in the digital data which is mapped into BPSK symbols.

13. (Original) The method of claim 12 wherein the spreading sequence is a pseudo-random noise (PN) code.

14. (Original) The method of claim 8 further comprising differentially encoding input data to result in the digital data which is mapped into BPSK symbols.

15. (Previously Presented) A system for mapping digital data into BPSK symbols comprising:

first means for mapping successive bits of the digital data into successive BPSK symbols using one or more BPSK constellations; and

second means for providing the one or more BPSK constellations to be applied by the first means in mapping successive bits of the digital data into BPSK symbols such that orthogonal BPSK constellations are applied to successive bits of the digital data.

16. (Original) A method of mapping digital data into BPSK symbols comprising:

a step for mapping a bit of the digital data into a BPSK symbol using a first BPSK constellation; and

a step for mapping a next successive bit of the digital data into a BPSK symbol using a second BPSK constellation orthogonal to the first.

17. (Previously Presented) A method of mapping digital data into BPSK symbols comprising:

mapping successive bits of the digital data into successive BPSK symbols using one or more BPSK constellations;

providing the one or more BPSK constellations to be applied in mapping bits of the digital data into BPSK symbols such that orthogonal BPSK constellations are applied to successive bits of the digital data; and

toggling a state bit between first and second states as successive bits of the digital data are encountered, wherein a first constellation is applied if the state bit is in the first state, and a second constellation orthogonal to the first is applied if the state bit is in the second state.

18. (Previously Presented) The method of claim 17 further comprising rotating the constellation to be applied by 90° as successive bits of the digital data are encountered.

19. (Previously Presented) The method of claim 17 wherein each BPSK symbol comprises in-phase (I) and quadrature (Q) components, and the method further comprises modulating a carrier signal with the I and Q components of the BPSK symbols and transmitting the modulated signal over a wireless interface.

20. (Previously Presented) The method of claim 17 further comprising spreading input data with a spreading sequence to produce the digital data.